

Fig. 1

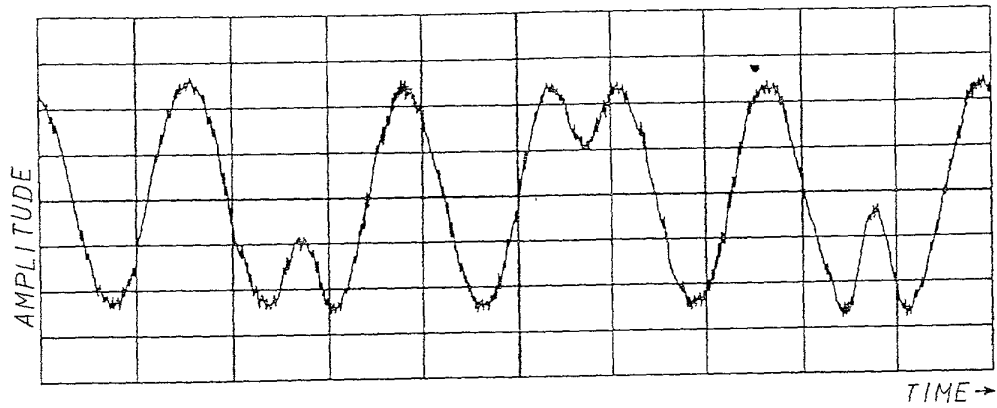


Fig. 2

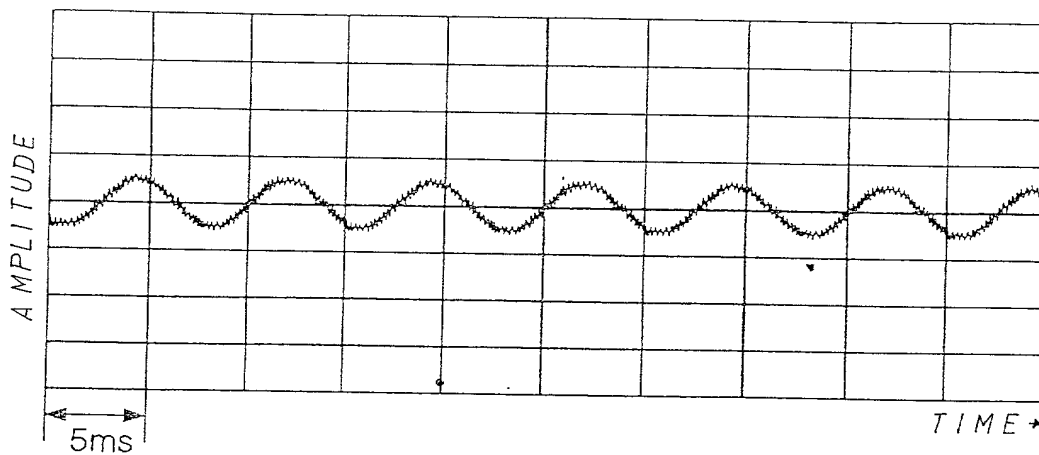


Fig. 3 A

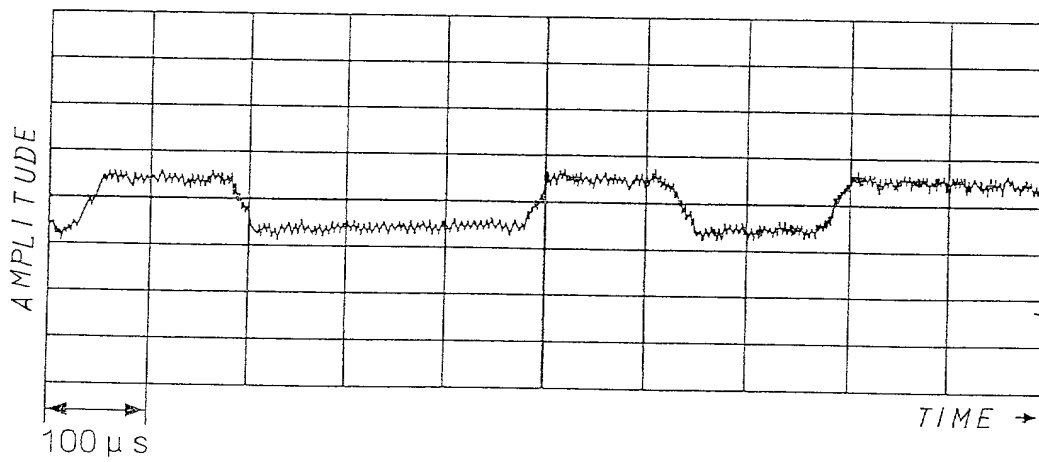


Fig. 3 B

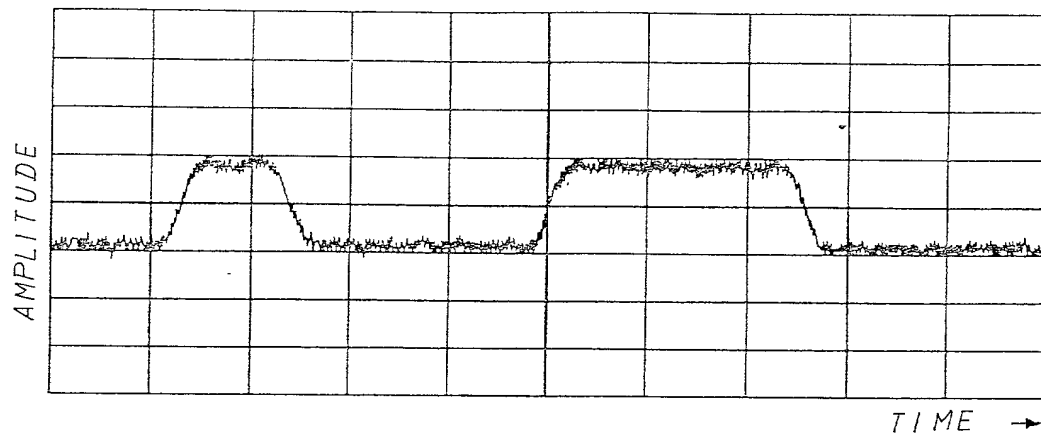


Fig. 4

Fig. 5

ITEM	DESIGN	UNIT	NOTE
Recording channel for modulated signal	R	Channel	Audio signal is recorded in L-channel.
Bit rate	12.6	kbps (kilobits/sec.)	
Carrier frequency	6.30	KHz	
Symbol Velocity	3.15	K baud (kilo symbols/sec.)	
Bits of Symbol	4	bits/symbol	
Coding	4 - bit gray code		
Modulation	16 DPSK		
Demodulation	Synchronous detection		
Synchronization	Synchronous nibble		
Delay time of audio signal in recording	0	msec	
Delay time of audio signal in playback	500	msec	
Recording Level	- 6.0 to - 12.0	dB	Relative value with respect to full range.
Silent period	$2.0 \leq$	second	Necessary for synchronization.

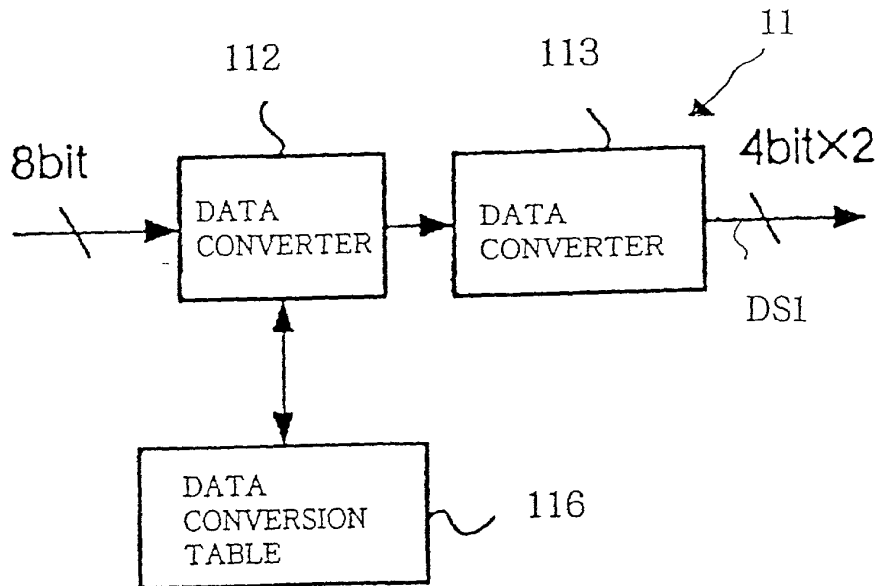


Fig. 6

BIT STRING OF STATUS BYTE BEFORE DATA CONVERSION	BIT STRING AFTER DATA CONVERSION	DEFINITION OF STATUS BYTE
C0	C40	PROGRAM CHANGE AT CHANNEL 0
C1	C41	PROGRAM CHANGE AT CHANNEL 1
C2	C42	PROGRAM CHANGE AT CHANNEL 2
⋮	⋮	⋮
CF	C4F	PROGRAM CHANGE AT CHANNEL F
F0	C0	EXCLUSIVE
F1	C1	TIME CODE QUARTER FRAME
F2	C2	SONG POSITION POINTER
F3	C3	SONG SELECT
F4	C54	(NOT DEFINED)
F5	C55	(NOT DEFINED)
F6	C6	TUNE REQUEST
F7	C7	END OF EXCLUSIVE
F8	C8	TIMING CLOCK
F9	C9	(NOT DEFINED)
FA	CA	START
FB	CB	CONTINUE
FC	CC	STOP
FD	CD	(NOT DEFINED)
FE	CE	ACTIVE SENSING
FF	CF	SYSTEM REQUEST

Fig. 7

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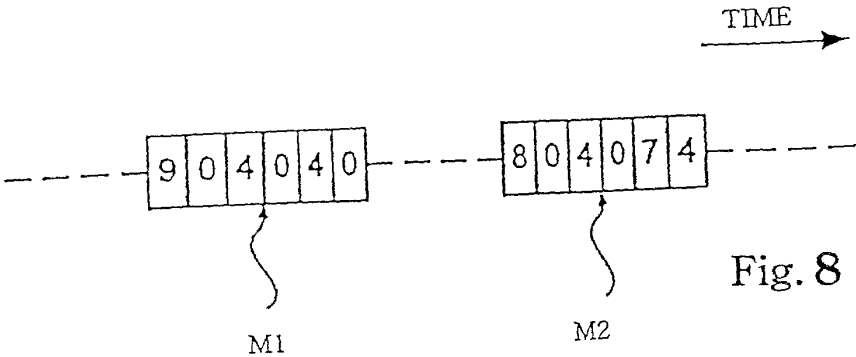


Fig. 8

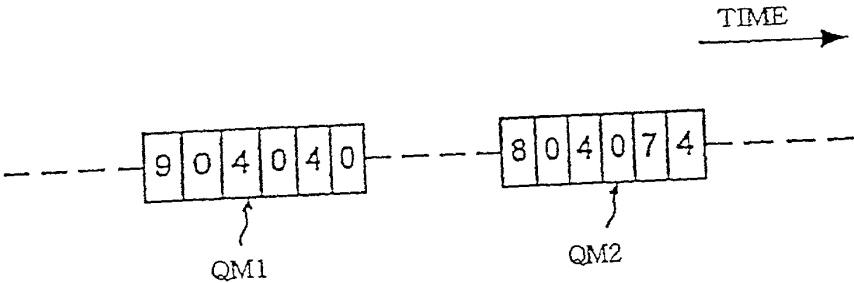


Fig. 9

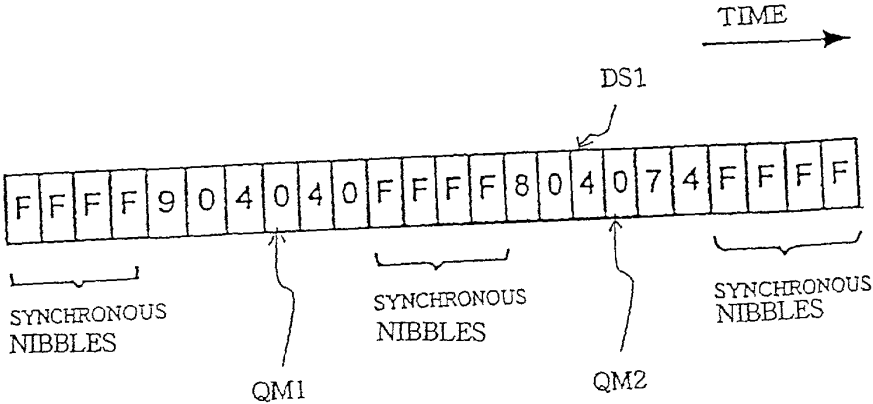


Fig. 10

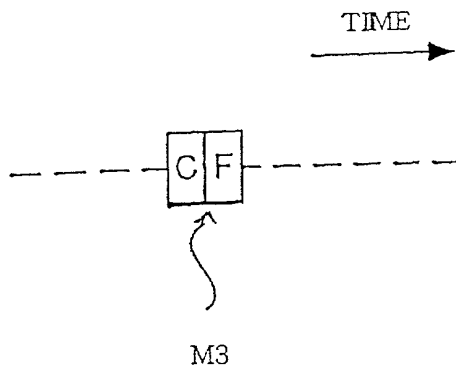


Fig. 1 1

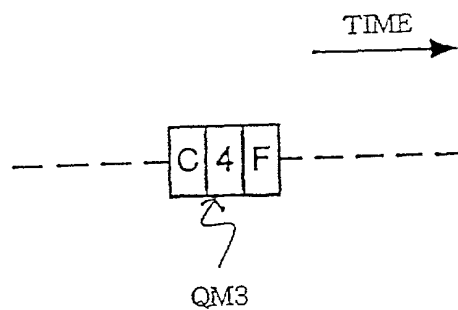


Fig. 1 2

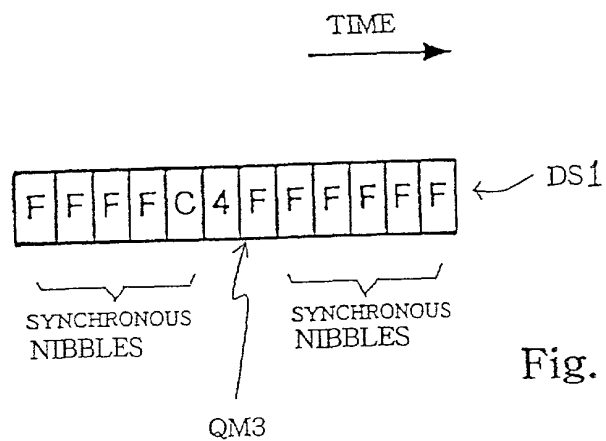


Fig. 1 3

10052838.011706

Gray Code Data	POSITION [Dec]	PHASE [rad]	I - COMPONENT	Q - COMPONENT
1000	0	0	1	0
1010	1	0.392699	0.92388	0.382683
1110	2	0.785398	0.707107	0.707107
0110	3	1.178097	0.382683	0.92388
0010	4	1.570796	0	1
0011	5	1.963495	-0.38268	0.92388
0111	6	2.356194	-0.70711	0.707107
1111	7	2.748894	-0.92388	0.382683
1011	8	3.141593	-1	0
1001	9	3.534292	-0.92388	-0.38268
1101	10	3.926991	-0.70711	-0.70711
0101	11	4.31969	-0.38268	-0.92388
0001	12	4.712389	0	-1
0000	13	5.105088	0.382683	-0.92388
0100	14	5.497787	0.707107	-0.70711
1100	15	5.890486	0.92388	-0.38268

Fig. 14



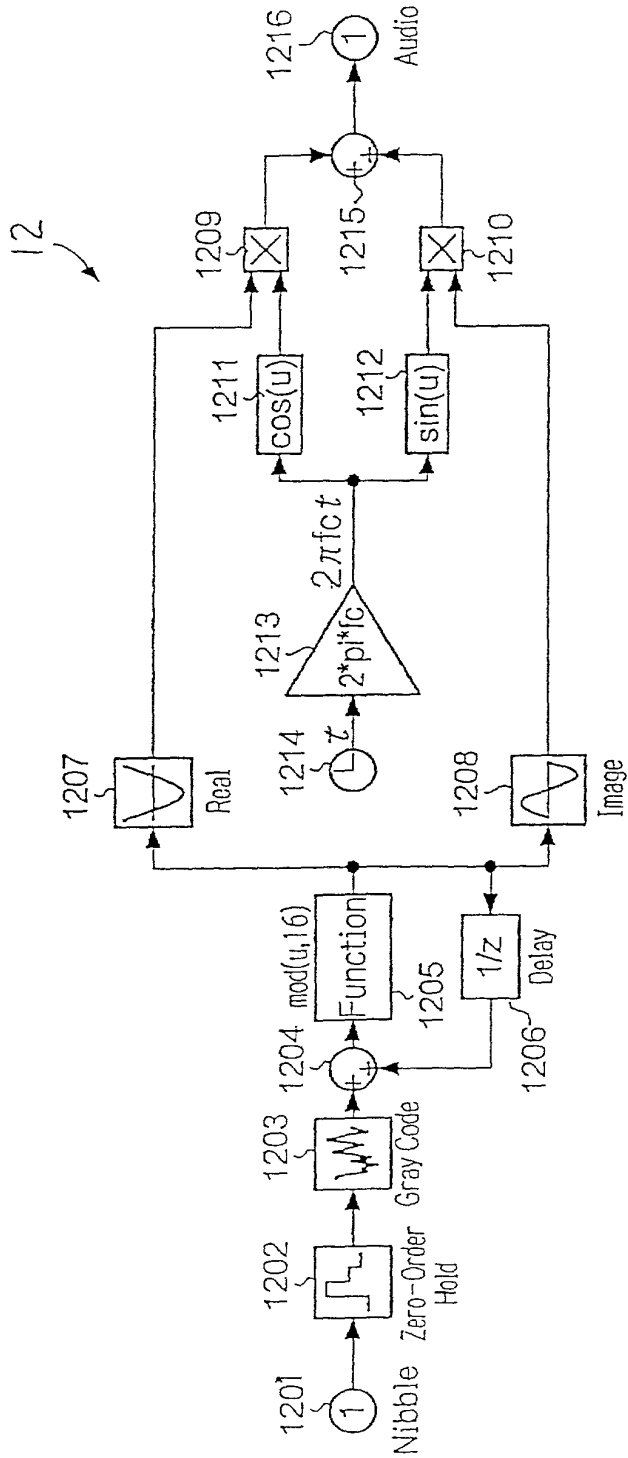


Fig. 16

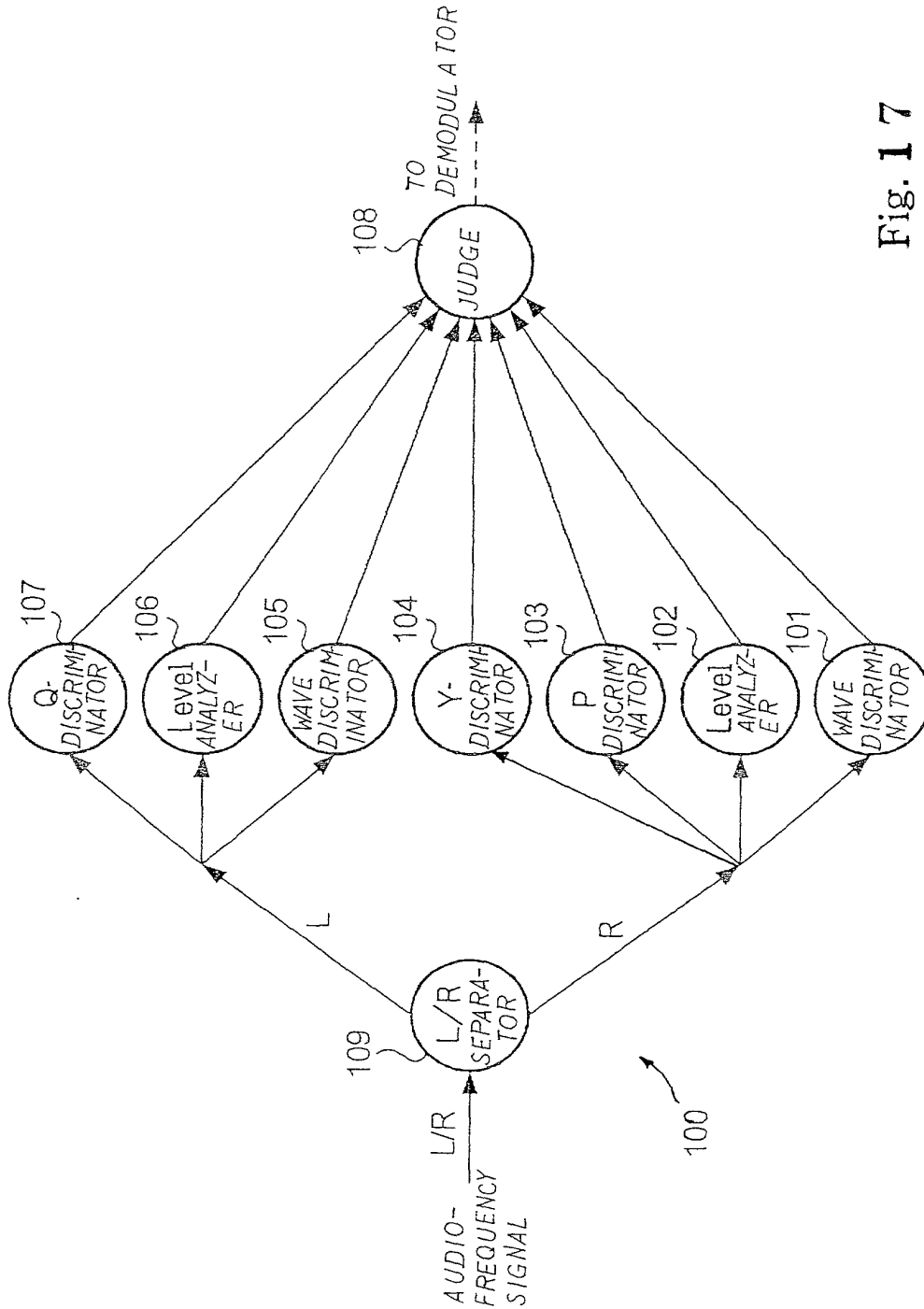


Fig. 17

FIG. 17

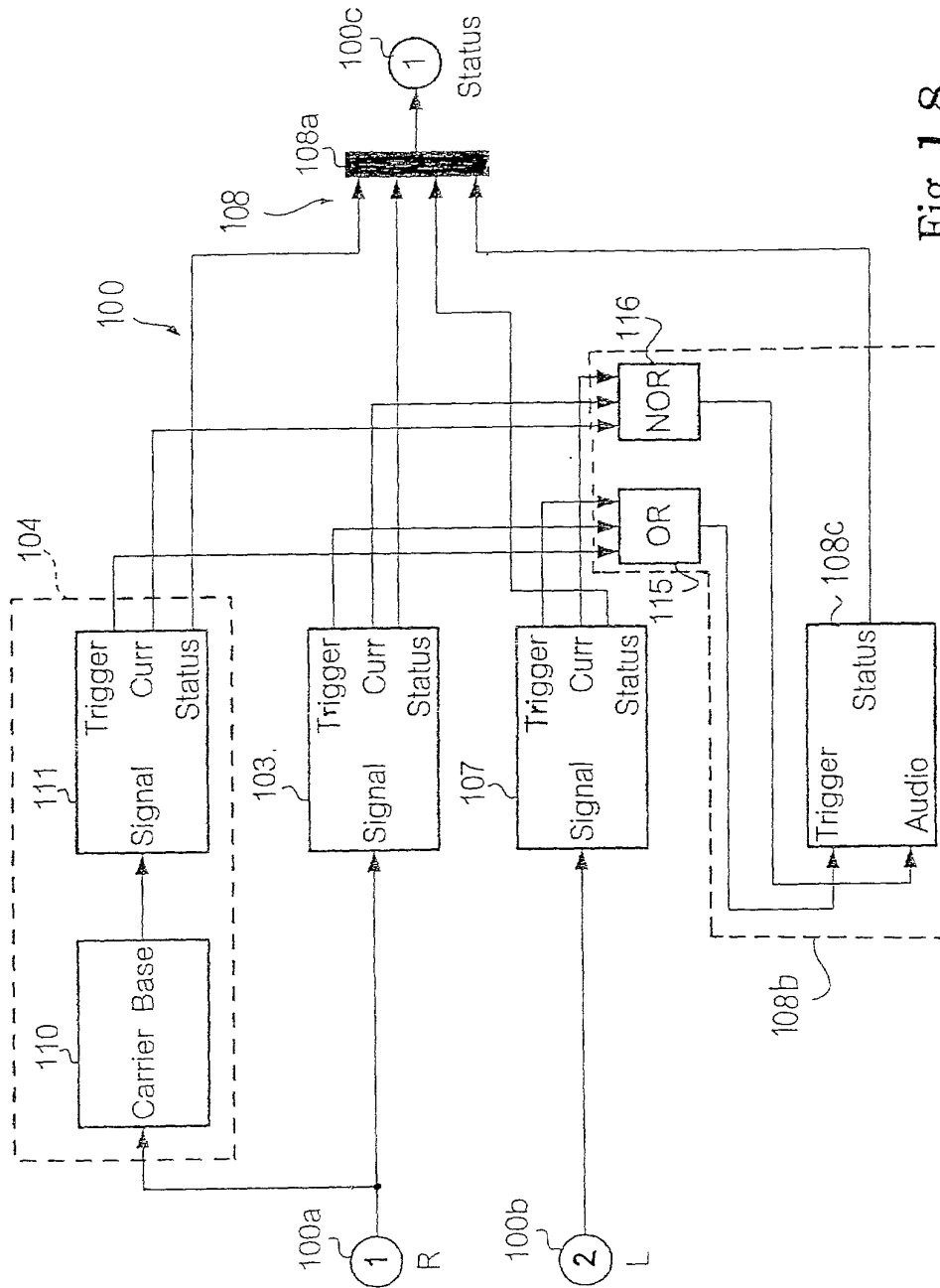


Fig. 18

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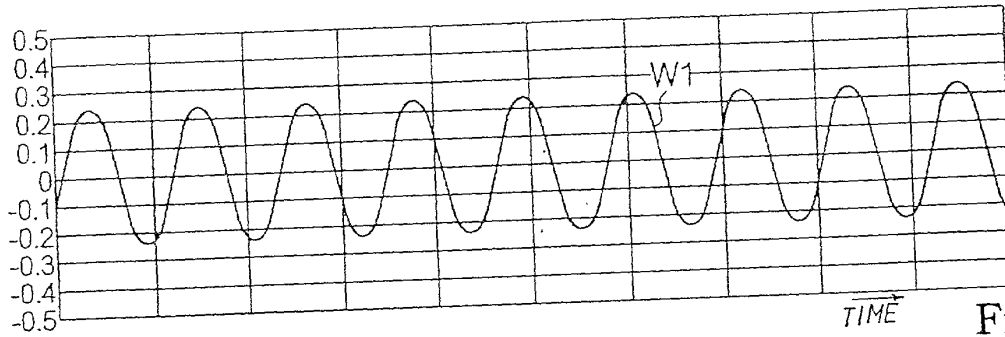


Fig.2 1

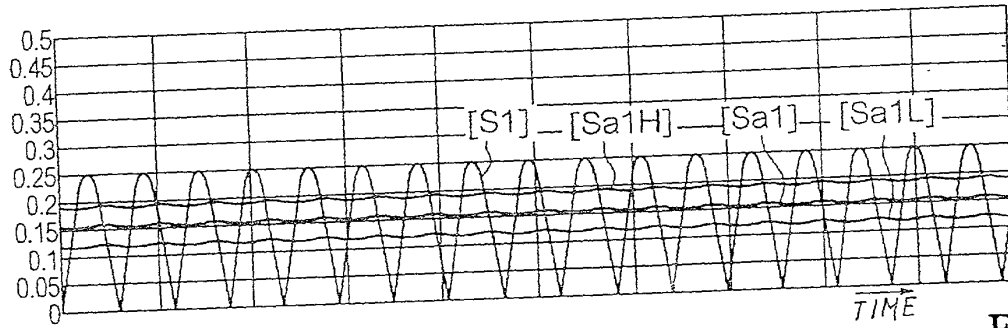


Fig.22

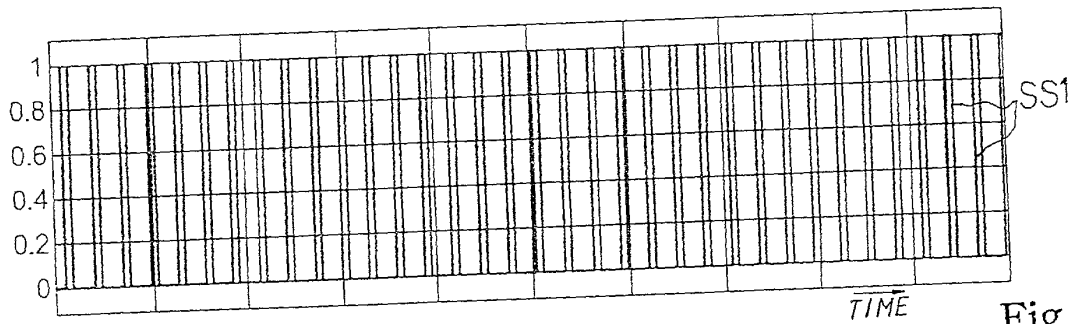


Fig.2 3

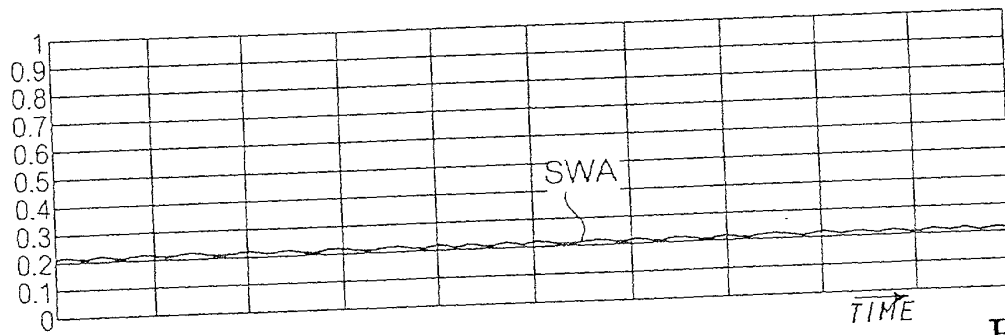


Fig.2 4

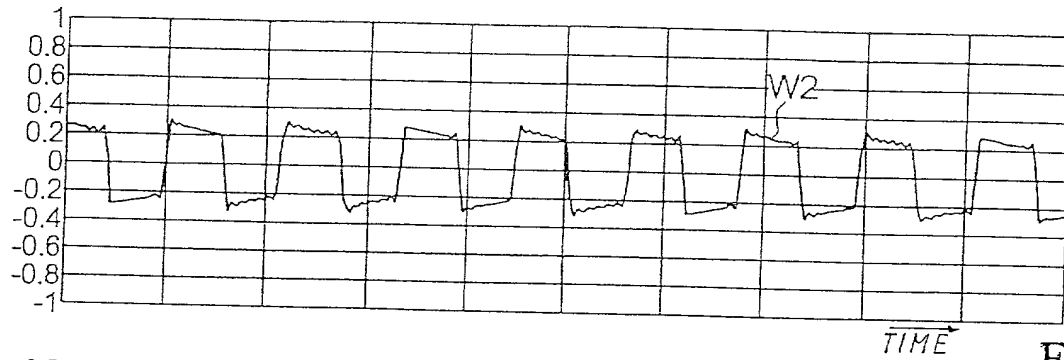


Fig. 2 5

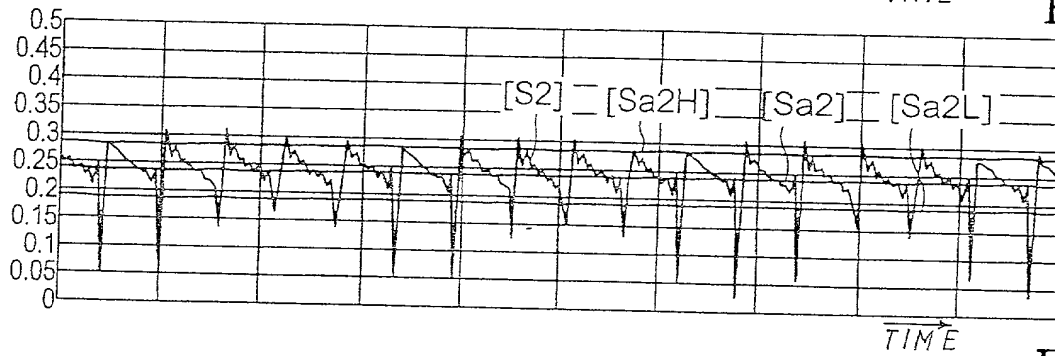


Fig. 2 6

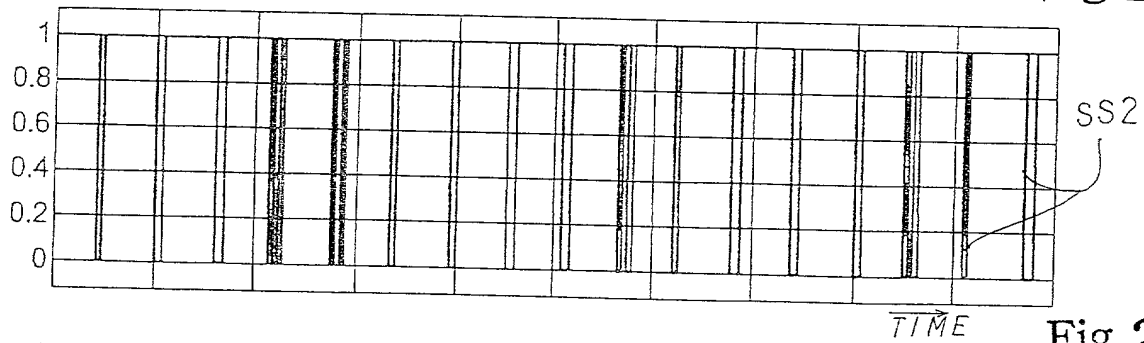


Fig. 2 7

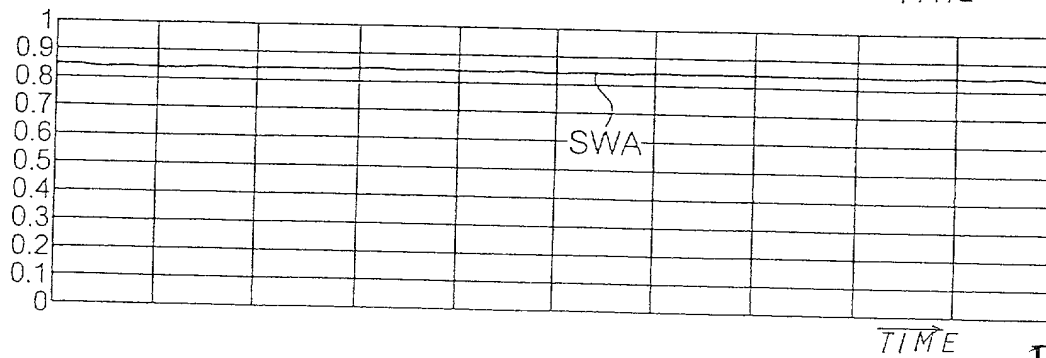


Fig. 2 8

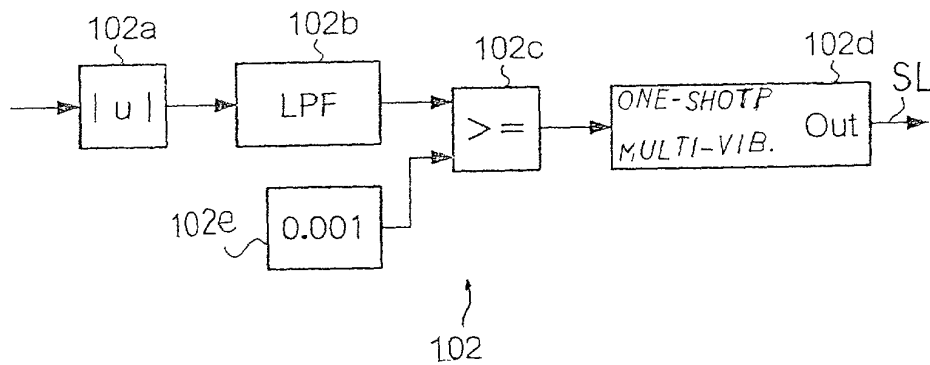


Fig. 29

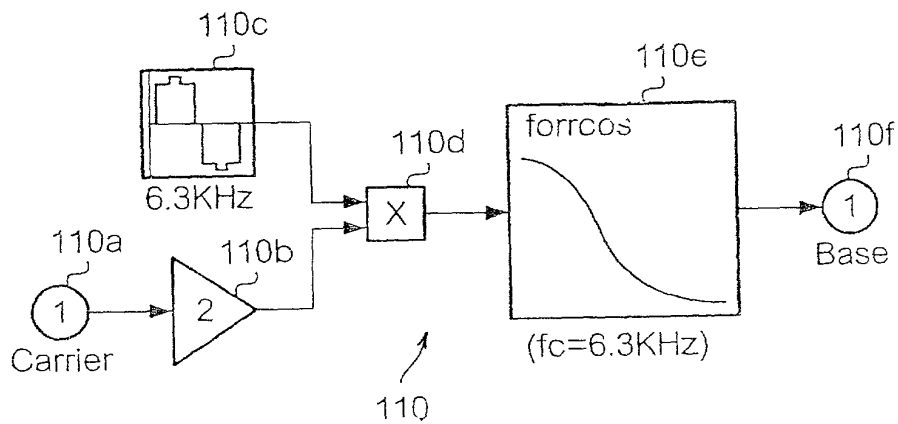


Fig. 30

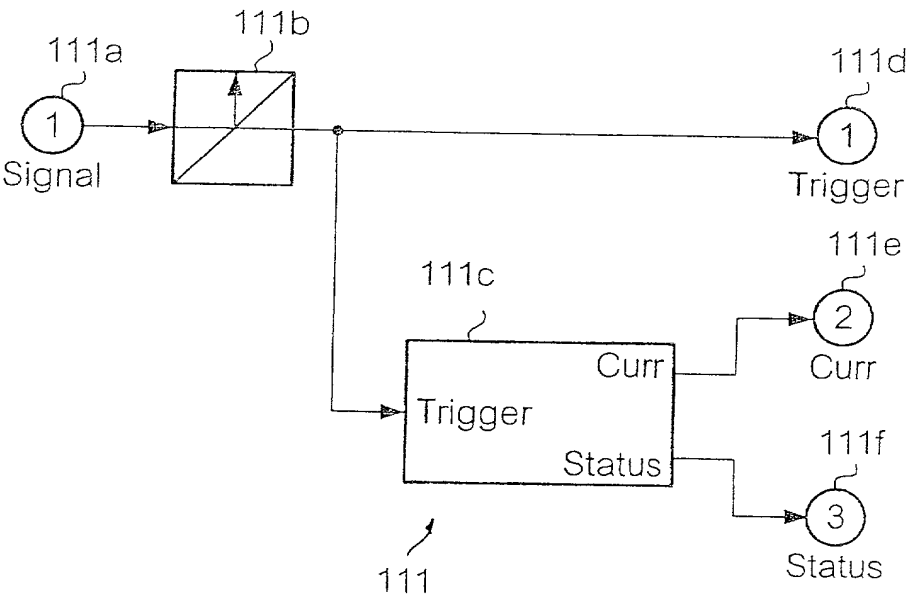


Fig. 31

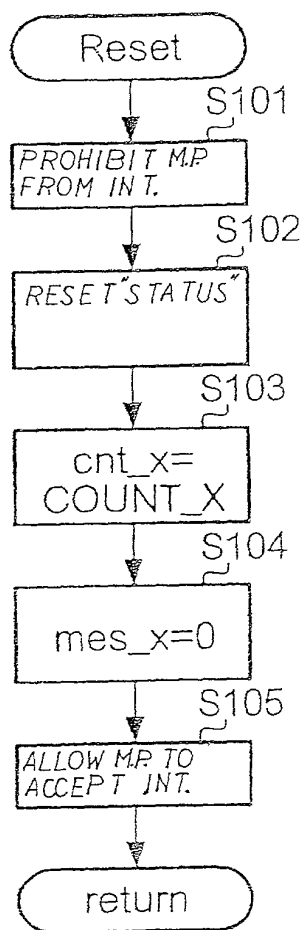


Fig. 32 A

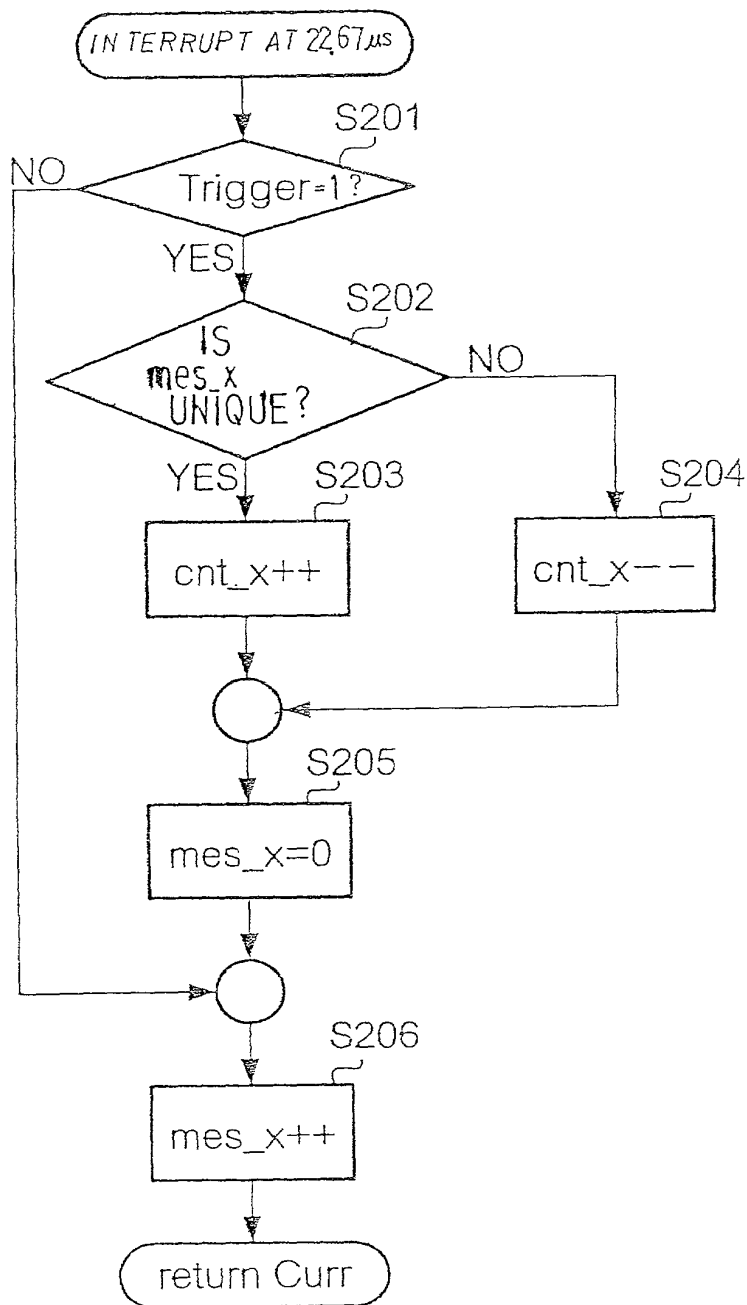


Fig. 32 B

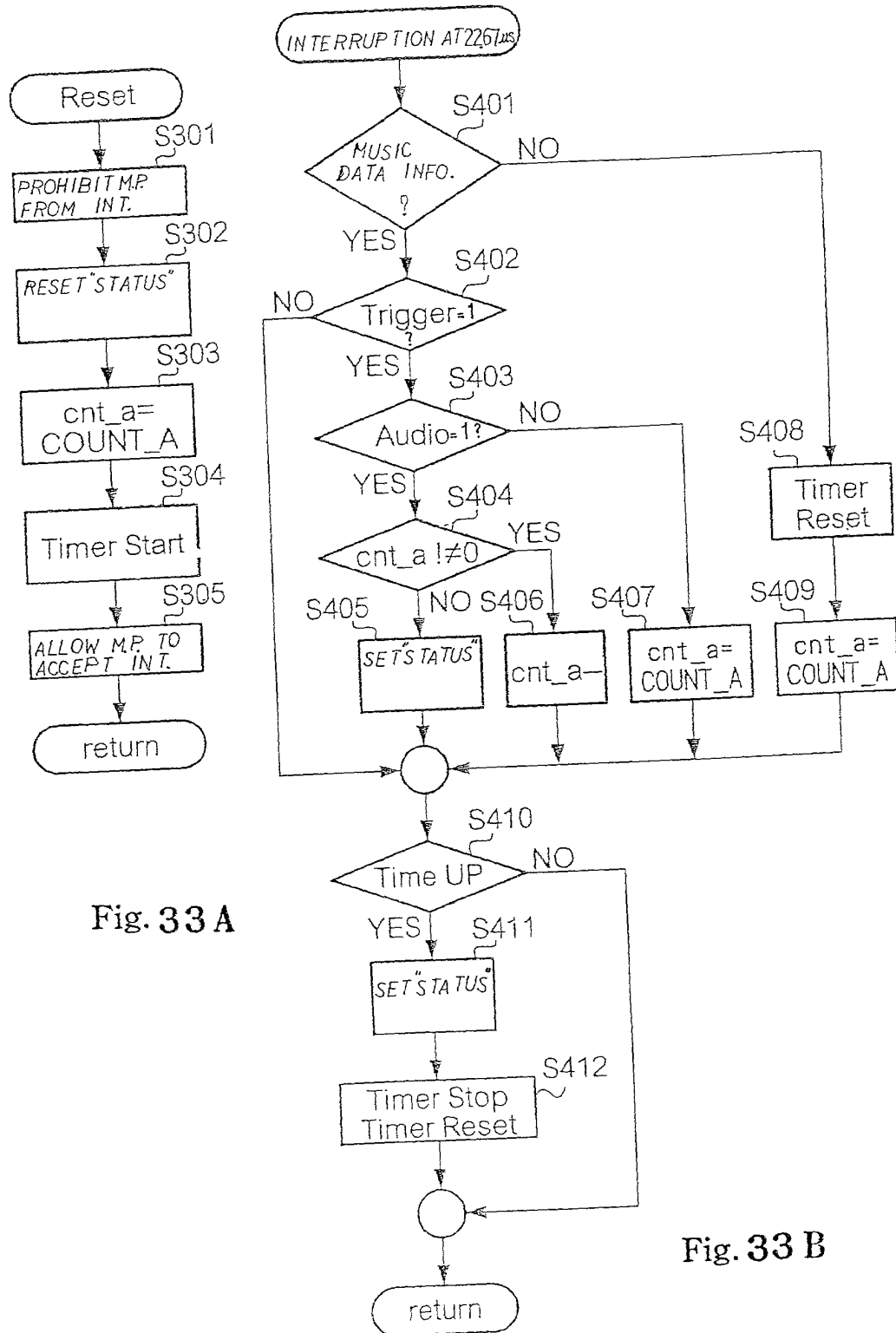
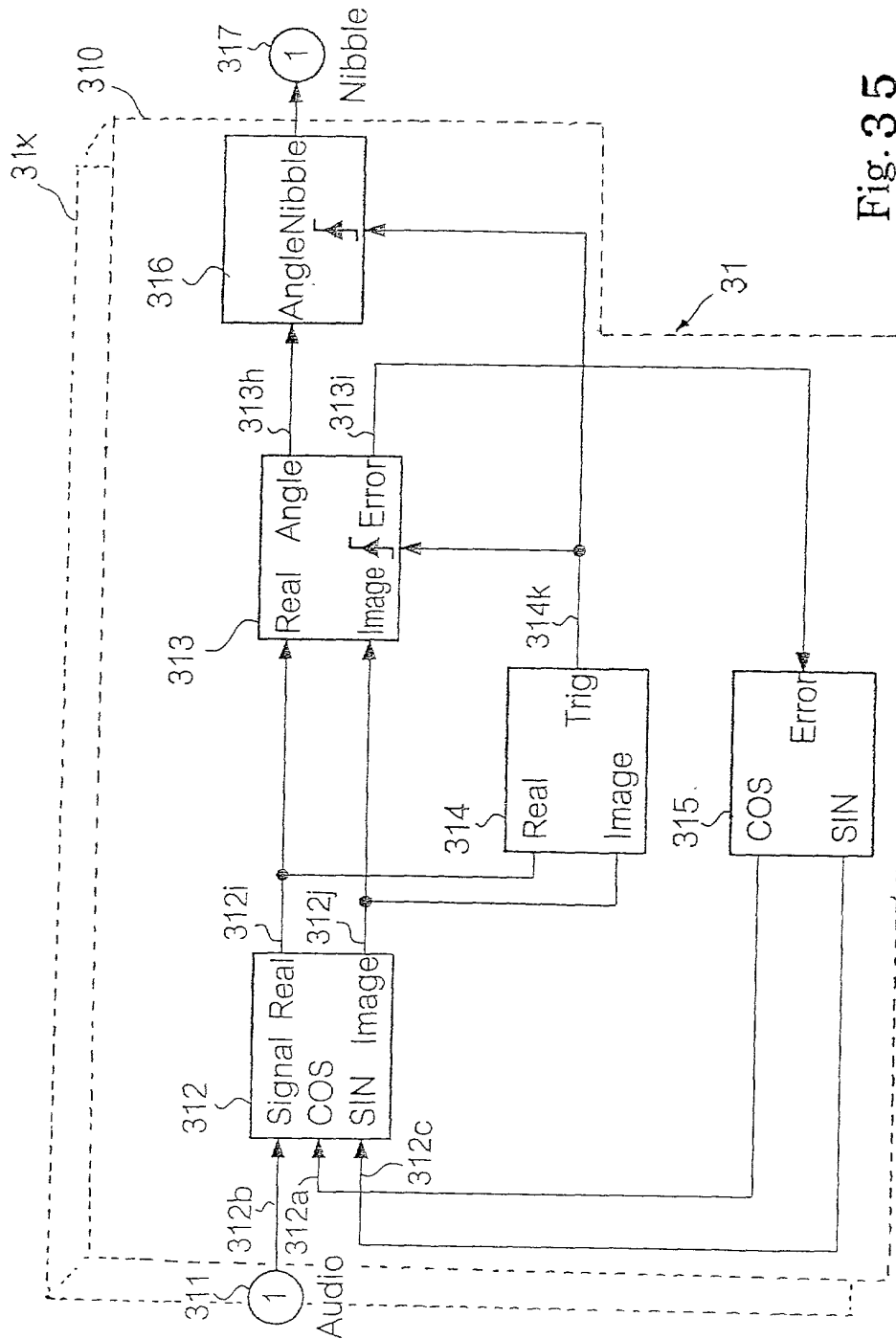


Fig. 33 A

Fig. 33 B

AUDIO FRQ. S.	Y-MOD. DISCRIM.	Q-MOD. DISCRIM.	P-MOD. DISCRIM.	L Level	R Level	L WAVE DISCRIM.	R WAVE DISCRIM.	Time- out	JUDGE
NIBBLE STREAM ANALYZE HEADPORTION (ONLY OTHER IS SILENT)	cnt_y>=TH_YH	-	-	SL	-	-	wav_r<TH_SINR	NO	Y-MOD.
	-	cnt_qp>=TH_QPH	-	-	SL	wav_l<TH_SINL	-	NO	Q-MOD. WHEN BOTH ARE SATIS- FIED.
	-	cnt_qc>=TH_QCH	-	-	SL	wav_l>=TH_SQRL	-	NO	
	-	-	cnt_p>=TH_PH	SL	-	-	wav_r>=TH_SQRR	NO	P-MOD.
	cnt_y<=TH_YL	cnt_qp<=TH_QPL && cnt_qc<=TH_QCL	cnt_p<=TH_PL	-	-	-	-	NO	Audio
	-	-	-	-	-	-	-	YES	Audio
	cnt_y>=TH_YH	-	-	-	-	-	wav_r<TH_SINR	NO	X-MOD.
	-	cnt_qp>=TH_QPH	-	-	SL	wav_l<TH_SINL	-	NO	Q-MOD.
	-	cnt_qc>=TH_QCH	-	-	-	wav_l>=TH_SQRL	-	NO	Q-MOD.
	-	-	cnt_p>=TH_PH	-	-	-	wav_r>=TH_SQRR	NO	P-MOD.
EXTERNAL AUDIO SIGNAL	cnt_y<=TH_YL	cnt_qp<=TH_QPL && cnt_qc<=TH_QCL	cnt_p<=TH_PL	-	-	-	-	NO	Audio
	-	-	-	-	-	-	-	YES	Audio

Fig. 34



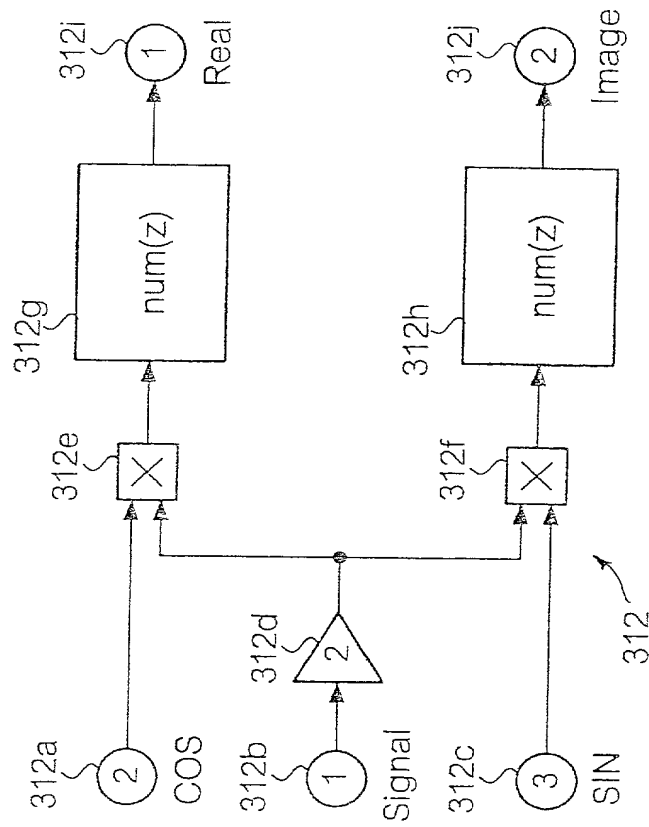


Fig. 36

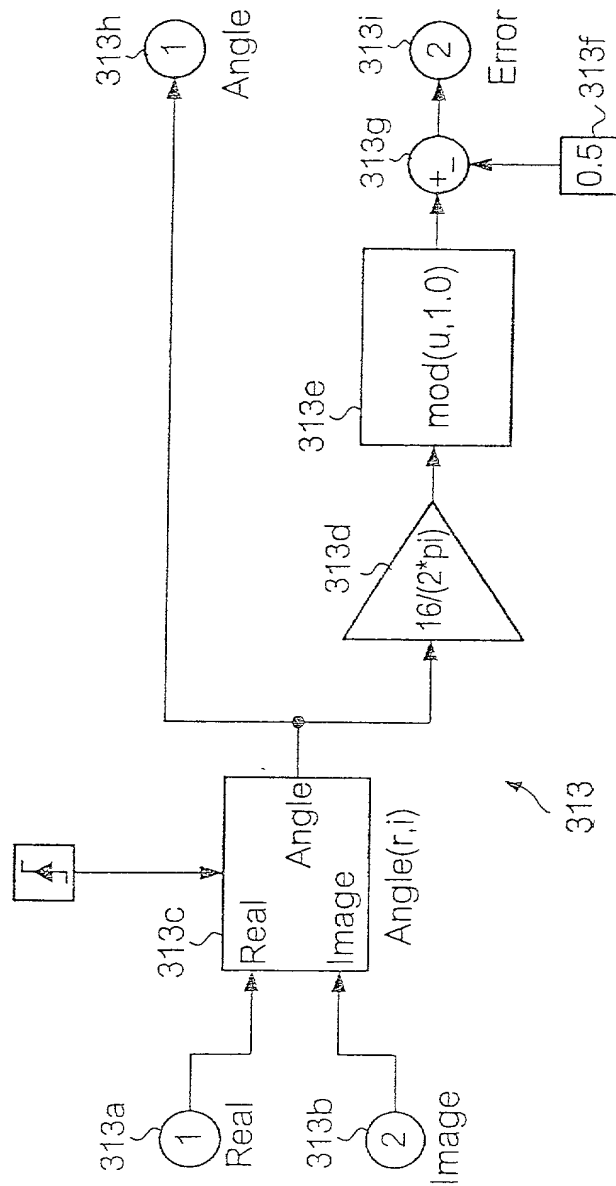


Fig. 37

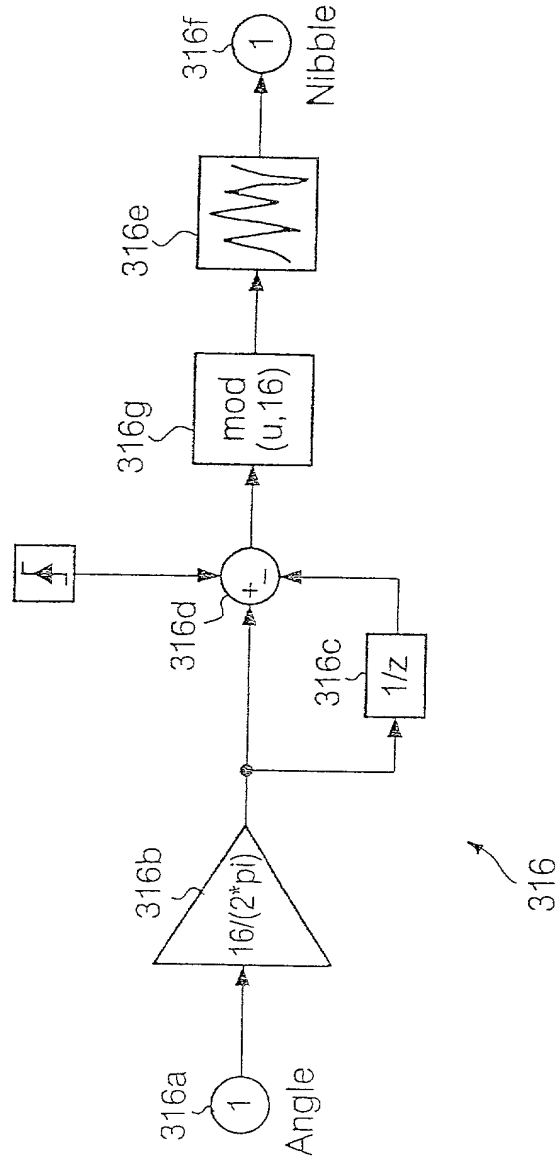


Fig. 38

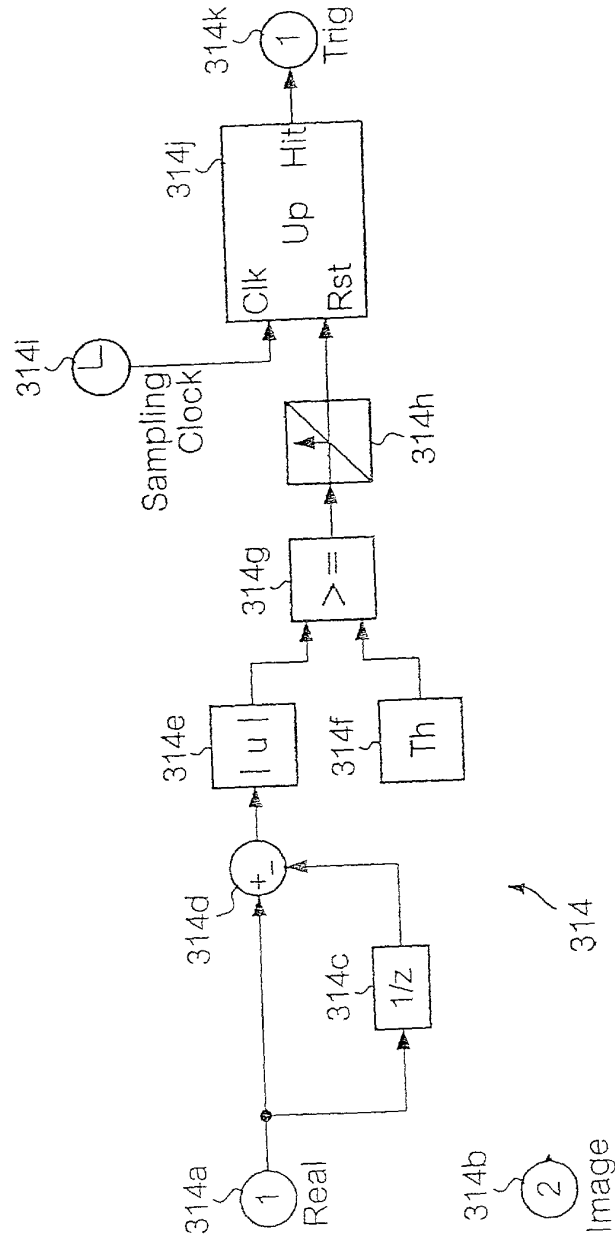


Fig. 39

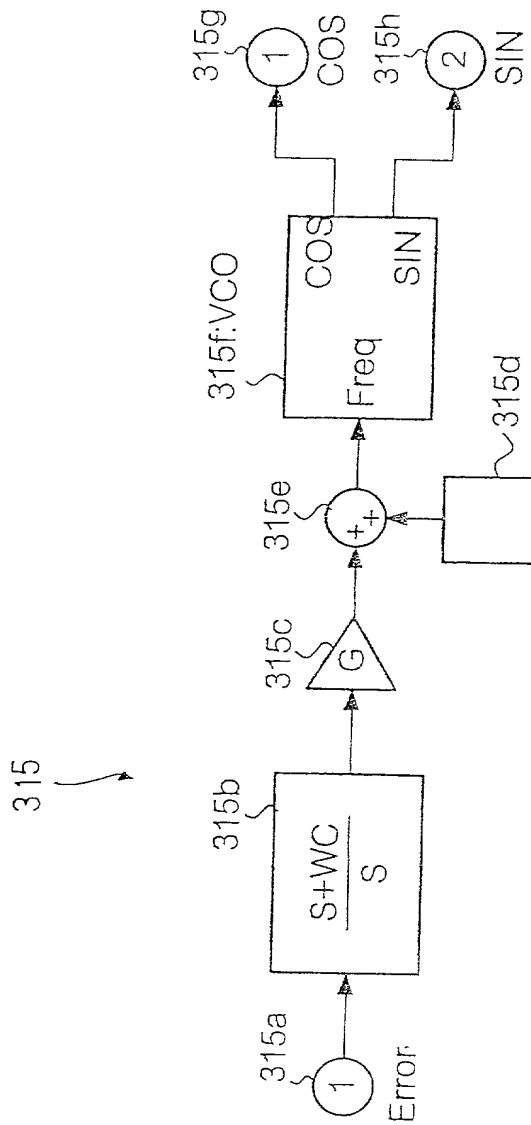


Fig. 40

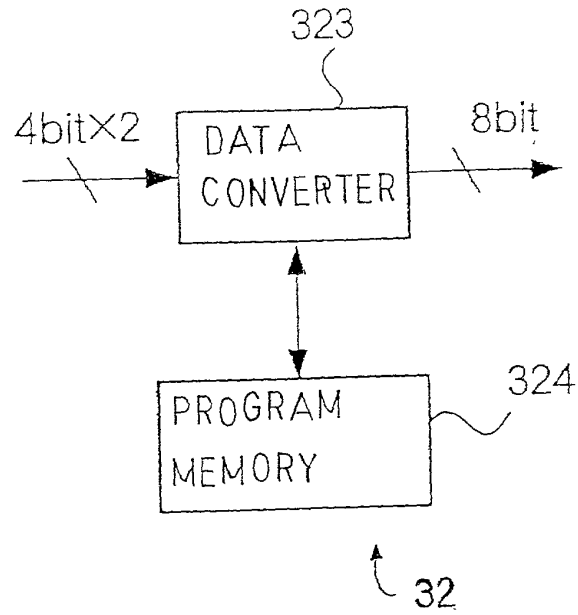


Fig. 41

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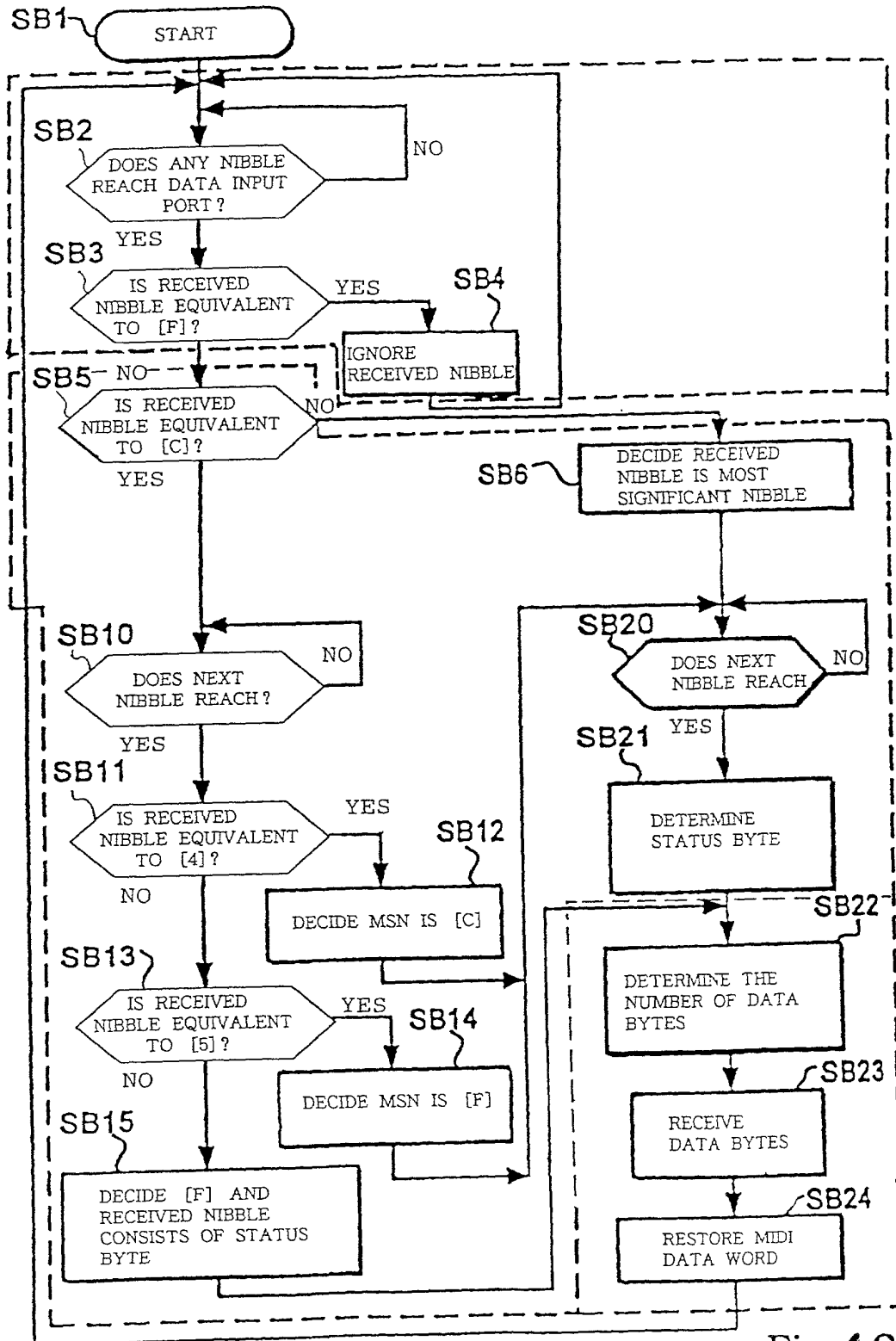


Fig. 4 2

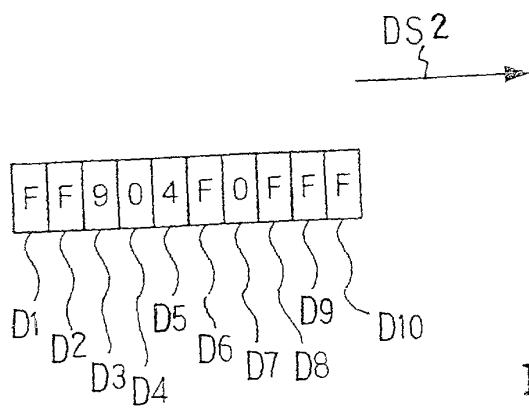


Fig. 43

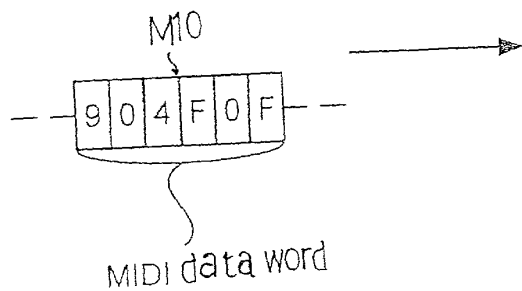


Fig. 44

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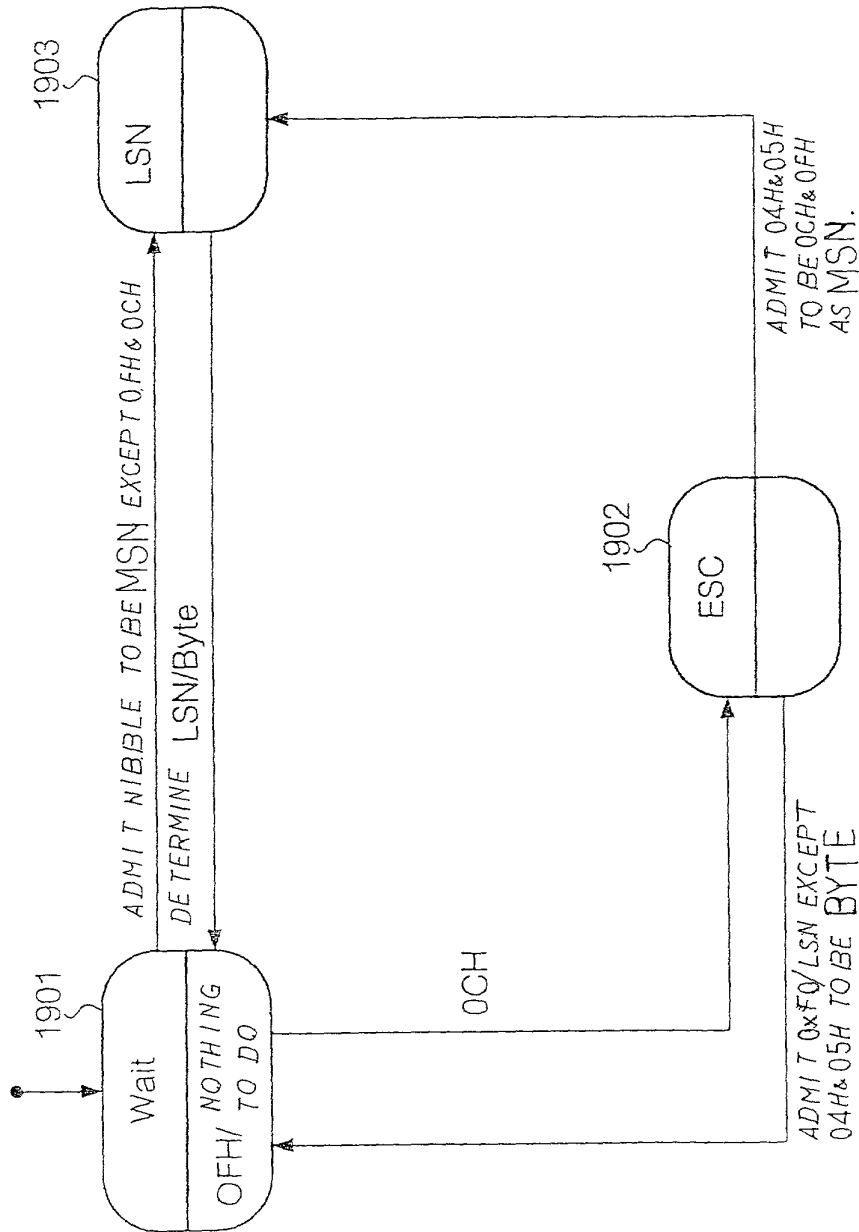


Fig. 45

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